

THE MOLLUSCA OF DOUGLAS COUNTY, KANSAS. GASTEROPODA.

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As one travels westward from the Mississippi River, the gradual diminution of the forest growths is very apparent. Tracts of timber get smaller and smaller and the trees become more stunted in growth until when the middle of Kansas is reached there are only a few cottonwoods, confined to a narrow belt along the banks of streams. Eastern Kansas is then a transition zone, where the timbered regions of the east fade gradually into the vast semi-arid plains of the southwest.

A botanical condition such as this is bound to have a very great influence upon a group of animals as closely associated with vegetable growths as the land mollusks are. We find some species—as the majority of the *Polygyras* for instance—extending only as far west as the trees go. Moisture and shade are requisites to their existence, and we find them becoming rarer in direct proportion to the decrease in vegetation. They have migrated westward just as fast but no faster than the trees.

And on the other hand there are some species of the plains area which do not extend appreciably into the timbered regions. On the border-line then, as we would expect, we find an intermingling of the two faunas.

Douglas County is a typical border county. Trees exist in little patches here and there but are mostly confined to the near vicinity of streams. Mollusks are not plentiful and generally distributed, but are addicted to living in colonies in the patches of trees.

Among the most important tracts of timber conchologically is Blue Mound, situated six miles southeast of Lawrence. This little hill which rises two hundred and fifty feet above the river flood plain, supports an excellent growth of small trees. Under the dead leaves and loose stones the small snails are to be found more abundant than any place else in the county.

The outcropping limestone ledges furnish several species which belong in general to the southwestern plains fauna. *Bulimulus dealbatus*, *Vallonia parvula*, *Bifidaria procera* and *Zonitoides singleyana*, are abundant in some such localities where there are no trees for miles.

Localities favorable for fresh-water snails are rare. The only

bodies of standing water in the county are small, and with one or two exceptions are artificial ponds. Horseshoe Lake and Lake View are natural basins but both are small and contain but few mollusks. The small streams emptying into the Kansas River contain a few shells very locally distributed. The River is too sandy for these animals.

The family *Ancylidæ* seems not to have a representative in these waters.

Very little collecting previous to 1908 has ever been done in Douglas County. *Polygyra m. chadwicki*, a dentate variety of *Polygyra multilineata* was described by Ferriss in the NAUTILUS for August, 1907, from specimens collected along the Kansas River at Lawrence. Aside from this one reference I have never found the shells of this county alluded to. Therefore I append the following list, based upon two years' collecting in which the entire county has been thoroughly searched. Probably not many more species will be collected. Four or five are withheld from this list because of uncertain identification.

Dr. V. Sterki has examined the *Pupidæ*, and Mr. F. C. Baker, the Lymneas, to both of whom I am very grateful.

Polygyra profunda Say.

Polygyra albolabris alleni Wetherby.

Polygyra multilineata Say.

Polygyra multilineata chadwicki Ferriss.

Polygyra divesta Gould. A single specimen found in drift along the Kansas River at Lawrence.

Polygyra clausa Say. With the exception of *P. profunda* and *P. albolabris alleni*, which range into Shawnee County on the west, Douglas County marks the extreme western range of the Mesodons. All the species are rare in this locality, and are found on the northern shaded slopes of hillsides which have limestone outcropping.

Polygyra dorfeuilliana Lea. Dead shells were found under conditions such that the species must be living here.

Polygyra monodon Rackett. This form lives on Blue Mound.

Polygyra fraterna Say. The common *Polygyra* of Kansas. Found everywhere.

Polygyra fraterna aliciaæ Pilsbry. Occasionally found with *P. fraterna*.

(To be continued.)